UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,057	03/18/2004	Nobuhisa Yoshida	250710US2S	4626

22850 7590 08/30/2007

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
MUHAMMED, ABDUKADER S	
ART UNIT	PAPER NUMBER
2627	

NOTIFICATION DATE	DELIVERY MODE
08/30/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No.	Applicant(s)	
	10/803,057	YOSHIDA ET AL.	
	Examiner	Art Unit	
	Abdukader Muhammed	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03/18/2004 and 07/20/2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,7,9, and 13-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,7,9, and 13-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed on July 20, 2007 has been considered. Claims 2, 4-6, 8, and 10-12 have been canceled and new claims 13-14 have been added. Claims **1, 3, 7, 9, and 13-14** remain in the application.

In light of the amendment, the objection to the drawing and claims and the rejection of 35 USC § 112 that were made in the office action mailed on April 20, 2007 has been withdrawn.

Applicant's arguments with respect to claims 1, 3, 7, 9, and 13-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2. Claims 3 and 13 are objected to because of the following informalities:

In claim 3, line 1 "An optical disk according to claim **2**" should be "An optical disk according to claim **1**" as claim 2 is a cancelled claim.

In claim 13, the last line "measured by a mode of measurement in reflection" should be "measured by a **double pass** mode of measurement in reflection" to be consistent with the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, 7, 9, and 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kondo et al. (US Publication 2002/0172139 A1).

Regarding Claim 1, Kondo et al. teach an optical disk comprising a molded substrate molded by injection molding and having information marks transferred thereonto (substrate 8 formed by injection molding; see page 23, paragraph [0372], lines 3-5 and figure 10), on which a recording film capable of recording information only once by a laser beam having a wavelength of 600 nm or less is formed (recording layer 9 recorded by a light of wavelength 350 nm to 450 nm; see page 18, paragraph [0302], lines 4-6; paragraph [0303], lines 1-3; page 21, paragraph [0334] and figure 10), and to and from which information can be recorded and reproduced, or on which a reflection film is formed so as to reproduce information from the optical disk (a reflective layer composed of a high reflectivity film such as gold and aluminum is formed on an information recording surface; see page 1, paragraph [0006], lines 1-4), wherein the magnitude of a birefringence of the entire region of the optical disk is ±85 nm or less when measured by a double pass mode of measurement in reflection (the birefringence of the transmitting layer 10, which dictates the birefringence of the whole disk as it is the only part light refracts through, is less than ±100 nm, preferably ±50 nm; see page 9, paragraph [0173], lines 7-12), when PRML signal processing is used to reproduce the information (PRML decoding circuit is used; see page 18, paragraph [0294], lines 4-8).

Regarding Claim 3, as applied to claim 1 above and Kondo et al. further teach that the magnitude of the double refraction of the optical disk is ±75 nm or less when measured by the double pass mode of measurement in reflection (the birefringence of the transmitting layer 10,

which dictates the birefringence of the whole disk as it is the only part light refracts through, is less than ±100 nm, preferably ±50 nm; see page 9, paragraph [0173], lines 7-12).

Regarding Claim 7, Kondo et al. teach an optical disk comprising a molded substrate molded by injection molding and having information marks transferred thereto (substrate 8 formed by injection molding; see page 23, paragraph [0372], lines 3-5 and figure 10), on which a recording film capable of recording and erasing information is formed, and on and from which information can be recorded and reproduced using a laser beam having a wavelength of 600 nm or less (recording layer 9 recorded by a light of wavelength 350 nm to 450 nm; see page 18, paragraph [0302], lines 4-6; paragraph [0303], lines 1-3; page 21, paragraph [0334] and figure 10), wherein the magnitude of a birefringence of the entire region of the optical disk is ±70 nm or less when measured by a double pass mode of measurement in reflection (the birefringence of the transmitting layer 10, which dictates the birefringence of the whole disk as it is the only part light refracts through, is less than ±100 nm, preferably ±50 nm ; see page 9, paragraph [0173], lines 7-12), when PRML signal processing is used to reproduce the information (PRML decoding circuit is used; see page 18, paragraph [0294], lines 4-8).

Regarding Claim 9, as applied to claim 8 above and Kondo et al. further teach that the magnitude of the double refraction of the optical disk is ±55 nm or less when measured by the double pass mode of measurement in reflection (the birefringence of the transmitting layer 10, which dictates the birefringence of the whole disk as it is the only part light refracts through, is less than ±100 nm, preferably ±50 nm; see page 9, paragraph [0173], lines 7-12), when PRML

signal processing is used to reproduce the information (PRML decoding circuit is used; see page 18, paragraph [0294], lines 4-8).

Regarding Claim 13, Kondo et al. teach an optical disk comprising a molded substrate molded by injection molding and having information marks transferred thereto (substrate 8 formed by injection molding; see page 23, paragraph [0372], lines 3-5 and figure 10), on which a recording film capable of recording information only once (write once or rewritable; see page 1, paragraph [0006]) by a laser beam having a wavelength of 600 nm or less (recording layer 9 recorded by a light of wavelength 350 nm to 450 nm; see page 18, paragraph [0302], lines 4-6; paragraph [0303], lines 1-3; page 21, paragraph [0334] and figure 10), the reflection film having a track pitch of 0.40 μm (for high density desirable track pitch is 0.25 to 0.45 μm; see page 11, paragraph [0203], lines 6-10) and a minimum mark length of 0.204 μm (minimum mark length of 0.185 μm; see page 22, paragraph [0353], lines 4-5) being formed to have a thickness of 0.6 mm so as to reproduce information from the optical disk (an information recording surface composed of an information track and an information pit array, which are engraved in a rugged shape on a surface of a transparent plastic substrate having a thickness of 0.6 mm; see page 1, paragraph [0005], lines 3-7), wherein the magnitude of a birefringence of the entire region of the optical disk is ±60 nm or less when measured by a double pass mode of measurement in reflection (the birefringence of the transmitting layer 10, which dictates the birefringence of the whole disk as it is the only part light refracts through, is less than ±100 nm, preferably ±50 nm; see page 9, paragraph [0173], lines 7-12).

Regarding Claim 14, Kondo et al. teach an optical disk comprising a molded substrate molded by injection molding and having information marks transferred thereto (substrate 8 formed by injection molding; see page 23, paragraph [0372], lines 3-5 and figure 10), on which a recording film capable of recording and erasing information is formed, and on and from which information can be recorded and reproduced using a laser beam having a wavelength of 600 nm or less (recording layer 9 recorded by a light of wavelength 350 nm to 450 nm; see page 18, paragraph [0302], lines 4-6; paragraph [0303], lines 1-3; page 21, paragraph [0334] and figure 10), the reflection film having a track pitch of 0.34 μm (for high density desirable track pitch is 0.25 to 0.36 μm; see page 11, the last three lines of paragraph [0203]) and a minimum mark length of 0.187 μm (minimum mark length of 0.185 μm; see page 22, paragraph [0353], lines 4-5) being formed to have a thickness of 0.6 mm so as to reproduce information from the optical disk (an information recording surface composed of an information track and an information pit array, which are engraved in a rugged shape on a surface of a transparent plastic substrate having a thickness of 0.6 mm; see page 1, paragraph [0005], lines 3-7), wherein the magnitude of a birefringence of the entire region of the optical disk is ±40 nm or less when measured by a double pass mode of measurement in reflection (the birefringence of the transmitting layer 10, which dictates the birefringence of the whole disk as it is the only part light refracts through, is less than ±100 nm, preferably ±50 nm; see page 9, paragraph [0173], lines 7-12).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior

art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 3, 7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cradic et al. (US 6,436,503 B1) as applied to claim 1 and claim 7, above, further in view of Kashihara et al. (US 6,339,574 B1).

Regarding Claims 1 and 3, Cradic et al. teach an optical disk comprising a molded substrate molded by injection molding and having information marks transferred thereonto (substrate 210 and the media is formed by injection molding; see column 8, lines 52-55 and figure 2), on which a recording film capable of recording information only once by a laser beam having a wavelength of 600 nm or less is formed, and to and from which information can be recorded and reproduced, on which a reflection film is formed so as to reproduce information from the optical disk (reflective data layer 320 in which reflectivity is included recorded by red laser 600 nm; see column 8, lines 66-67, figure 2 and column 9, lines 43-45), wherein the magnitude of a birefringence of the entire region of the optical disk is ±85 nm or less (±75 nm or less in case of claim 3) when measured by a double pass mode of measurement in reflection (the maximum birefringence of a molded disk according to the present invention if preferably below 80 nm, and more preferably below 40 nm. In a most preferred embodiment, the maximum birefringence is below 30 nm; see column 7, lines 52-56). Cradic et al. differ from the claimed invention in that they do not specifically show PRML (Partial Response and Maximum Likelihood) signal processing is used to reproduce signal information from the optical disk.

Kashihara et al. on the other hand teach PRML in optical disk signal reproduction (see abstract, lines 5-7). It would have been obvious to one of ordinary skill in the art at the time the

invention was made to have PRML signal processing scheme in the system of Cradic et al. since Kashihara et al. teach that by using PRML it is possible to provide an optical disk capable of reproducing information correctly by setting the track pitch and bit pitch of a track in a suitable range (see column 11, lines 51-59).

Regarding Claims 7 and 9, Cradic et al. teach an optical disk comprising a molded substrate molded by injection molding and having information marks transferred thereto (substrate 210 and the media is formed by injection molding; see column 8, lines 52-55 and figure 2), on which a recording film capable of recording and erasing information is formed, and on and from which information can be recorded and reproduced using a laser beam having a wavelength of 600 nm or less (reflective data layer 320 recorded by red laser 600 nm; see column 8, lines 66-67, figure 2 and column 9, lines 43-45), wherein the magnitude of a birefringence of the entire region of the optical disk is ±70 nm or less (±55 nm or less in case of claim 9) when measured by a double pass (the maximum birefringence of a molded disk according to the present invention if preferably below 80 nm, and more preferably below 40 nm. In a most preferred embodiment, the maximum birefringence is below 30 nm; see column 7, lines 52-56). Cradic et al. differs from the claimed invention in that it does not specifically show PRML (Partial Response and Maximum Likelihood) signal processing is used to reproduce signal information from the optical disk.

Kashihara et al. on the other hand teach PRML in optical disk signal reproduction (see abstract, lines 5-7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have PRML signal processing scheme in the system of Cradic et al. since Kashihara et al. teach that by using PRML it is possible to provide an optical disk capable of

reproducing information correctly by setting the track pitch and bit pitch of a track in a suitable range (see column 11, lines 51-59).

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) Will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdukader Muhammed whose telephone number is (571) 270-1226. The examiner can normally be reached on Monday-Thursday 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. Customer Service can be reached at (571) 272-2600. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

am

am
22 August 2007

WAYNE YOUNG
SUPERVISORY PATENT EXAMINER